



CONSERVATIVE MANAGEMENT OF ADOLESCENT IDIOPATHIC SCOLIOSIS

Physical therapists at Spinal Dynamics continually review journals for information about scoliosis. We are pleased to offer the following abstracts about adolescent idiopathic scoliosis and conservative treatment.

We are happy to discuss clinical questions with physicians and other healthcare providers as well as prospective patients. Please contact us by phone at 414-302-0770 or by email at info@sdwpt.com

Radiological and cosmetic improvement 2 years after brace weaning – a case report

Rigo M. *Pediatr Rehabil.* 2003 Jul-Dec;6(3-4):195-9

In the early international literature, up to now only very few cases are reported with adolescent idiopathic scoliosis (AIS) and a significant improvement of Cobb angle after conservative management. In the recent literature the possibility of an improvement of Cobb angle at skeletal maturity after brace treatment is mentioned no more. The application of physiotherapy and braces is widely rejected while the standards of conservative measures differ greatly worldwide. So it seems necessary more than ever to present the possibility of successful conservative measures nowadays. More detailed case reports with long-term follow-up using defined protocols are needed to provide appropriate standards for replication by others. The purpose of this presentation is to demonstrate the possibility of significant improvement of curvature angle and cosmesis after the application of long-term physiotherapy and brace treatment in a girl with a curve of more than 50 degrees where spontaneous resolving is not usual. A pre-menarchial girl (although being Risser 2) with a Cobb angle of 53 degrees was treated by exercises and curve-specific bracing for more than 3 years. Two years after the start of the weaning period, the Cobb angle was 36 degrees with a marked and stable cosmetic improvement at the age of 18 years. This case report shows that conservative treatment can improve both cosmesis and curvature in immature patients with AIS. The results of such treatment is appreciated by the patients because of the significant reduction of the truncal deformity as documented by surface topography. *PMID: 14713585 [PubMed - indexed for MEDLINE]*

Exercises reduce the progression rate of adolescent idiopathic scoliosis: results of a comprehensive systematic review of the literature

Negrini S, Fusco C, Minozzi S, Atanasio S, Zaina F, Romano M. *Disabil Rehabil.* 2008;30(10):772-85

BACKGROUND: A previously published systematic review (Ped.Rehab.2003 - DARE 2004) documented the existence of the evidence of level 2a (Oxford EBM Centre) on the efficacy of specific exercises to reduce the progression of AIS (Adolescent Idiopathic Scoliosis). **AIM:** To confirm whether the indication for treatment with specific exercises for AIS has changed in recent years. **STUDY DESIGN:** Systematic review. **METHODS:** A bibliographic search with strict inclusion criteria (patients treated exclusively with exercises, outcome Cobb degrees, all study designs) was performed on the main electronic databases and through extensive manual searching. We retrieved 19 studies, including one RCT and eight controlled studies; 12 studies were prospective. A methodological and clinical evaluation was performed. **RESULTS:** The 19 papers considered included 1654 treated patients and 688 controls. The highest-quality study (RCT) compared two groups of 40 patients, showing an improvement of curvature in all treated patients after six months. We found three papers on Scoliosis Intensive Rehabilitation (Schroth), five on extrinsic auto-correction-based methods (Schroth, side-shift), four on intrinsic auto-correction-based approaches (Lyon and SEAS) and five with no auto-correction (three asymmetric, two symmetric exercises). Apart from one (no auto-correction, symmetric exercises, very low methodological quality), all studies confirmed the efficacy of exercises in reducing the progression rate (mainly in early puberty) and/or improving the Cobb angles (around the end of growth). Exercises were also shown to be effective in reducing brace prescription. **CONCLUSION:** In five years, eight more papers have been published to the indexed literature coming from throughout the world (Asia, the US, Eastern Europe) and proving that interest in exercises is not exclusive to Western Europe. This systematic review confirms and strengthens the previous ones. The actual evidence on exercises for AIS is of level 1b.

PMID: 18432435 [PubMed - indexed for MEDLINE]

The efficacy of Schroth's 3-dimensional exercise therapy in the treatment of adolescent idiopathic scoliosis in Turkey

Otman S, Kose N, Yakut Y. Saudi Med J. 2005 Sep;26(9):1429-35

OBJECTIVE: To determine the effectiveness of 3-dimensional therapy in the treatment of adolescent idiopathic scoliosis. **METHODS:** We carried out this study with 50 patients whose average age was 14.15 +/- 1.69 years at the Physical Therapy and Rehabilitation School, Hacettepe University, Ankara, Turkey, from 1999 to 2004. We treated them as outpatients, 5 days a week, in a 4-hour program for the first 6 weeks. After that, they continued with the same program at home. We evaluated the Cobb angle, vital capacity and muscle strength of the patients before treatment, and after 6 weeks, 6 months and one year, and compared all the results. **RESULTS:** The average Cobb angle, which was 26.1 degrees on average before treatment, was 23.45 degrees after 6 weeks, 19.25 degrees after 6 months and 17.85 degrees after one year ($p < 0.01$). The vital capacities, which were on average 2795 ml before treatment, reached 2956 ml after 6 weeks, 3125 ml after 6 months and 3215 ml after one year ($p < 0.01$). Similarly, according to the results of evaluations after 6 weeks, 6 months and one year, we observed an increase in muscle strength and recovery of the postural defects in all patients ($p < 0.01$). **CONCLUSION:** Schroth's technique positively influenced the Cobb angle, vital capacity, strength and postural defects in outpatient adolescents.

PMID: 16155663 [PubMed - indexed for MEDLINE]

Related articles:

- Negrini S, Antonini G, Carabalona R, Minozzi S:
Physical exercises as a treatment for adolescent idiopathic scoliosis. A systematic review.
Pediatric Rehabilitation. 2003 Jul-Dec;6(3-4):227-35.
- Rigo M, Reiter Ch, Weiss HR:
Effect of conservative management on the prevalence of surgery in patients with adolescent idiopathic scoliosis.
Pediatric Rehabilitation. 6(3-4) (2003):209-214.
- Rigo M, Quera-Salva G, Puigdevall N:
Effect of the exclusive employment of physiotherapy in patients with idiopathic scoliosis. Retrospective study.
Proceedings of the 11th International Congress of the WCPT. London, 1991.
- Rigo M, Quera-Salva F, Villagrana M, Ferrer M, Casas A:
Effect of specific exercises on the sagittal profile of scoliotic spines.
Scoliosis 2007, 2 (suppl 1): s7.
- Weiss HR, Verres C, Lohschmidt, El Obedidi N:
Pain and scoliosis—is there any relationship? 1998 Orthopadische Praxis. 34:602-606.